Working Group #2: 3-neutrino mixing

Preliminary Bullet Points

- 3-neutrino mass and mixing is the only uncontroversial leptonic flavor structure coming out of the experimental results up to now.
- The still unknowns in this framework are: the ordering of the states and the possibility of leptonic CP violation. The non-maximality of theta_23 also has to be clarified.
- The determination of these unknowns is of key importance to understand the mechanism responsible for neutrino masses as well as the possibility of generation of the matter-antimatter asymmetry in the early universe.
- The suite of presently running experiments are either directly exploring the three unknowns or are producing results that will directly contribute to these measurements by reducing systematic uncertainties (neutrino interaction measurements) or precisely measuring related parameters (theta13, atmospheric mass splitting).
- Proposed and running experiments can potentially measure the ordering and theta_23 in the next 5-10 years. The measurement of CPV is likely to take longer and require a large-scale experiment.

Questions:

1. What is the rough timeline for answering the three open questions (mass hierarchy, delta, and octant)? How will each experiment address these questions? How much will the future experiments (JUNO, PINGU etc) improve our understanding over the currently running experiments?
2. What are the synergies between the different experiments? (for example between different approaches to measuring mass hierarchy - reactor and atmospheric neutrinos)